Sabine and Neches Rivers and Sabine Lake Bay
Basin and Bay Expert Science Team (BBEST) Meeting
Tuesday, November 24, 2009, 10 AM – 2 PM
Lower Neches Valley Authority, Main Office
7850 Eastex Freeway Beaumont, Texas 77708

MINUTES

Call to Order and Introductions

Chairman Tatum called the meeting to order and initiated introductions of members present at the meeting and on the phone. All but two members participated. Rex Hunt gave his proxy to Sam Vaugh. Dr. Harrell notified the chairman that he was abstaining from the process.

September 24, October 27 (Meetings #10 & #11) Minutes:

The minutes from the September meeting were approved with one addition: "nutrients, sediment, and other biologically important constituents" to be inserted in the third sentence of the section on Bob McFarlane's presentation after "…i.e. the biota,". The October meeting minutes were approved without changes.

Public Comments

No public comment was received.

SAC Status Report

No SAC members were present at the meeting.

Discussion and Approval of Final Report

Chairman Tatum remarked that the first draft had been sent out and everyone's comments were received and incorporated into the final report with the exception of what was offered for Section 2.1.8 (high flow pulse issue). To remind everyone, Section 2.1.8 was originally in the recognition section, but has been changed to a recommendation after a lack of consensus. It has been recognized in the report as an unresolved issue.

Sam Vaugh has re-worked some information on the high flow pulse issue that the group originally had a consensus on, and after further discussion the group has been unable to reach consensus. Sam presented his approach to Section 2.1.8 by providing flow frequency curves that demonstrate the effects of the pulse modifications. Sam recommended a change to no high flow pulses in dry conditions, as opposed to the original draft which included 2 per season pulses in dry conditions. The ecological basis for this decision came from what was included in the flow frequency curves and the changes in the overall flow regimes in the seasonal flow patterns.

Dr. Winemiller thought it was inappropriate to look at human uses as we evaluate the ecological needs of the system. He disagrees with the specific thresholds under Sam's interpretation from an ecological standpoint.

Sam Vaugh continued his presentation on Section 2.1.8. Using flow frequency curves of Big Sandy Reservoir, he contrasted original flow regimes with the modified pulse frequencies and elimination of the dry pulses he suggested. Sam explained the overall and seasonal curves which were all around a 2% shift, and he posed the question "Is that shift significant?" Sam didn't believe it was and believed this to be an acceptable environmental risk. He went on to isolate the flow frequency curve of the dry conditions, and in comparing the difference between the initial and final draft flow regimes, he noticed a 2-4% shift. Dr. Winemiller interjected that Sam's analysis is irrelevant, does not include an ecological perspective, and that SB3 does not mandate this type of analysis. Dr. Winemiller clarified how HEFR is used. He explained that HEFR is a tool to separate out initial components, which are then studied, evaluated and modified from an ecological point of view. Chairman Tatum questioned the ecological evidence for these flows, which also introduced a discussion on how human population growth is not in the scope of their considerations. Dr. Winemiller brought up the fact that we have lost the paddlefish and some of the minnow species and other fish fauna have shifted, and he referenced the biological overlay document to treat the current condition for the purpose of SB3 as essentially sound. Dr. McBroom discussed the importance of erring on the side of caution, which is not accomplished by failing to recommend a dry flow pulse. A counter question was asked about the ecological evidence for having a dry flow pulse. Kirk stated that the spawning of certain species of fish is synchronized with flow pulses from late February to early June to justify the need for a dry flow pulse.

Returning to Sam's isolated dry season flow frequency curve, there was discussion on the usefulness of this ecologically since it does not measure the pulses, just total flow. Discussion turned to a dry season hydrograph on Big Sandy Reservoir (pg.114-120, Fig. 21), which included 2 peaks, but they are not qualifying pulses to be preserved in the system. Not protecting those pulses is a problem according to Dr. Winemiller, and discussion then turned to the cycle of floods in East Texas and how the group should try to preserve those with the flow recommendations and prevent an episode where a flood wouldn't occur for more than 3 years.

Dr. Winemiller then began his presentation regarding modifications to Section 2.1.8. He discussed accepting smaller pulses but suggested less risk to the ecological components if we trim the top of the pulse rather than the bottom (subsistence), since at the bottom the system is under stress and just a little change could create a huge response. He also suggested inserting a caveat into the report to further study HEFR flows because we need to protect more of the smaller pulses. He objected to the current language of Section 2.1.8, and specifically disagreed with not having a high flow pulse in the dry season. When the topic turned to a possible draft of new language, Dr. Winemiller

suggested making a statement in Section 2.1.8 that recognizes the critical ecological functions of in-channel high flow pulses, and that these are worthy of protection. He proposed stripping all attainment frequencies, mentioning the exercise with HEFR to be used as consideration of some kind of attainment target to maintain a sound ecological system, though he was not completely happy with the HEFR results, especially the high flow pulses.

Sam Vaugh was hesitant to throw out the application examples in the report, and Dr. Winemiller wanted to leave the attainment frequencies as an unresolved issue. He thought the high flow pulses are too big to qualify and wants to add a caveat explaining that we need to protect smaller, non-qualifying events. Dr. Winemiller also believed that some of the high flow pulses do not need protection from an ecological perspective. Other members, along with Dr. Winemiller, concluded that this needs more HEFR analysis, but it is too late to begin that, so a caveat must be added.

Cindy reminded the group that stakeholders can't change BBEST recommendations, but they can also make their own. She remarked that though the discussion is good, some of this is more of an issue for the stakeholders to decide. Scott Hall then suggested if we recommended adding one dry pulse, would that be enough for a consensus. Dr. Winemiller said no because that qualifying flow could come in January, and he also suggested that a desktop approach to high flow pulses is not possible. He explains that HEFR numbers have no ecological meaning until you perform an analysis with ecological indicators. David Parkhill suggested that the Section 2.1.8 rewrite should leave it more open and be less specific. Dr. Winemiller insisted that the report needed to acknowledge the uncertainty of the specific numbers, but err on the protective side. He proposed that if the group is forced to make a recommendation on this, then we have to have in-channel high flow pulses in every season, especially winter and spring, and we should go with the 3 that came out of HEFR. If the group doesn't have to make that recommendation, then just say we recognize and recommend that in-channel high flow pulses have to be protected, but we don't know what the right amount is. Both have caveats.

Dr. Winemiller brought up Fig. 31 (Angelina River near Alto) to use as an example to discuss how HEFR defined the pulses and why the group should protect the 3. Sam Vaugh discussed his understanding of the high flow pulses, and questions recommending a pulse in a dry condition. He didn't believe that we would even see a pulse of that magnitude in the winter on a 2 per season basis under dry conditions, which slightly changed Dr. Winemiller's view. Dr. Wineniller suggested that maybe the HEFR output is too coarse-scaled and is constraining our ability to talk about the flow needs for the ecological components. He was not sure where to go with this. Scott Hall clarified that the high flow pulses are across the whole period of record, not separated out into seasons as the base flows are. It was asked if there would be consensus if the group recommended 1 high flow pulse in a dry season as a target. David Parkhill clarified

the references of dry season vs. winter/spring/summer/season. A dry condition could encompass multiple seasons, if not years.

Cindy asked if a path forward might be how the 2 per season high flow pulses were derived. If they were an average from a range, then maybe using 1 high flow pulse per season would be a good compromise. Sam Vaugh suggested changing the draft report to say 1 high flow pulse per season in dry conditions, instead of 2. David Parkhill interjected using a reservoir project example to illustrate that a potential reservoir would have conditions to pass the high flow pulse for the environment instead of being able to capture it. In this example, the group needs to be comfortable that the ecology really needs that pulse. Scott Hall used the Alto gage example to show that differences in volumes of pulses can be significant for reservoir storage. Gary Graham then suggested that we consider a requirement for a project to pass a pulse only if a storm event did not produce a pulse downstream of the project because that pulse would probably occur. However, Dr. Winemiller argued that we don't know if the pulse magnitudes are correct. He doesn't know that we need 3500 cfs to provide the functions of a pulse, and we may not even need 1600 cfs in the winter. He also suspected that smaller pulses with higher frequencies are more important. The bigger categories of pulses are less critical, though still provide important functions.

David Parkhill suggested a requirement for a dry condition pulse only to be applied in the Spring/Summer seasons and zero for Fall/Winter. Dr. Winemiller agreed and had proposed something similar last week which also reduced the magnitude and frequencies. David Parkhill suggested that the coupling of those changes with downstream intervening pulses will reduce the impact on a new project. After some discussion about potential new draft language for Section 2.1.8, Dr. Winemiller and Sam Vaugh were both going to take a shot at drafting new language during the lunch break and then reconvene at 1 PM after sending their versions back to each other.

Lunch

Dr. Winemiller would like to include his 2 slides next to Sam's research in Section 6, but change the shape of the distribution from normal to skewed. This matter was put on hold as discussion turned to the proposed new language for Section 2.1.8. The group discussed Dr. Winemiller's new language and looked at specifying the rules for the March-August (Spring and Summer) pulses. Two pulses are recommended in the 6 month period at the magnitude of the 2 per season category. Dr. Winemiller made additional edits to send back to the group that will attempt to clarify the confusing language regarding the March-August pulses. His edits specify "2 pulses within the 6 month period from March-August." This would allow for both pulses to occur in either the Spring or the Summer, which he thinks may be better ecologically. There is agreement that the season should define the magnitude of the pulse. Sam Vaugh suggested recognizing the seasonal delineations as an area for reevaluation, and everyone was in agreement. After Recommendation 5, the following edit was made,

"During Spring and Summer (defined in this instance as Spring, March-May, and Summer, June-August), one of the smaller magnitude pulses must be passed during each season for the critical ecological functions." Everyone agreed this is now a recommendation and not a recognition. Everyone was in agreement with the latter part of Dr. Winemiller's edits for Section 2.1.8. Dr. Winemiller believed that the words "are adequate" are too strong, and the words "may be adequate" are suggested. Everyone was in agreement with the following change in the last paragraph of Section 2.1.8, "The pulses are currently perceived that they may be adequate to provide…"

Dr. Winemiller introduced his lingering issue with the language on subsistence flows that he wants to add a qualifier to. He deleted the last qualifying sentence in the last paragraph of Section 2.1.6 and added 3 sentences that were taken ated from the biological overlay appendix. Everyone was in agreement with his changes.

Sam Vaugh brought up the changes that need to be made to the rest of the draft report to reflect the changes in Section 2.1.8. The changes discussed today need to be carried through to Table 15 on pg. 109, Section 6.1.4.1 on pg. 110, and Fig. 22 on pg. 117. Sam will make these changes this evening and email them to everyone.

In Section 6.1.5, on pg. 112, another change was proposed. The last sentence of the fourth paragraph on that page needs to have the word "runoff" added to list of contributions.

Dr. Winemiller brought up another issue regarding the trigger for defining wet/average/dry conditions. He wondered if there was potential for harmful positive feedback by adopting this as a threshold. For example, can humans keep a reservoir at a particular stage and capacity and therefore at a specific hydrologic condition? Sam responded that this lies with the TCEQ and how they permit the reservoirs, and that reservoir management will prevent that outcome. David Parkhill said that withdrawals do have an input, but the system of TCEQ permitting prevents it. It was brought up that TCEQ will define those conditions in the rule-making process.

All members were content with the latest changes. David Parkhill announced that the members propose a motion to adopt all changes as made and reviewed today. There was a second to the motion, and all approved.

Adjourn

The BBEST meeting adjourned with a reminder that all member signatures need to be acquired for the final report signature page by Monday, and electronic signatures are acceptable and preferred. There was a question about whether hard copies are needed for Monday to send to TCEQ. Chairman Tatum will check will Dr. Harrell to get him on board with the report. Regarding the agenda for stakeholders, Jerry Clark will send out an email to members and get a meeting together.